

## Calculus IV

**Description:** In this course we study the calculus of vector-valued functions of one or several variables.

**Prerequisite:** One of MATH 200, MATH 226, MATH 253. (MATH 221 is recommended.)

**Textbook:** *Multivariable Calculus, 8th edition*, by James Stewart. Earlier editions are acceptable.

### Topics:

- Vector functions of one variable (§13.1–§13.4)  
vector functions and space curves, derivatives and integrals of vector functions, arc length and curvature, velocity and acceleration
- Vector calculus (§16.1–§16.9)  
vector fields, line integrals and its fundamental theorem, Green's theorem, curl and divergence, parametric surfaces and their areas, surface integrals, Stokes' theorem, divergence theorem.

### Grading:

- Weekly homework (10%) due Wednesdays 09.21, 09.28, 10.12, 10.19, 10.26, 11.02, 11.16, 11.23, 11.30, with the lowest score dropped;
- Two 50-minute midterm exams (20% each) on Wednesdays 10.05 and 11.09.
- One 150-minute final exam (50%).

### Policies:

1. Calculators and notes are not allowed in the midterm and final exams.
2. Homework assignments are to be handed in at the beginning of class on Wednesdays. Solutions will be posted on web. A selection of the problems will be graded.
3. Permission to shift the weight of your missed midterms to other exams, or to ignore missed assignments, may be granted only in the following circumstances: (a) prior notice of a valid, documented absence (e.g. out-of-town varsity athletic commitment with a letter from a coach) on the scheduled date; or (b) notification to the instructor of absence due to a medical condition with a doctor's note. Otherwise, a score of 0 will be given for the missed midterms/assignments.
4. The period for final exams is December 6–21, 2016 inclusive. The exact time will be announced by the University in the middle of the term. Students should not make early travel plans that overlap with the scheduled exam period.

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**homepage:** <http://www.math.ubc.ca/~ttsai/courses/317-16F/>